



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL SERVICES DIVISION
REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

JUN 19 1995

acp

Site: Herculaneum
ID # MO0006260373
Break: 1.0
Other: 6/19/95



MEMORANDUM

SUBJECT: Summary of the Multimedia Inspection -
The Doe Run Company - Herculaneum Smelter,
Herculaneum, MO

FROM: Kris Goschen Kris Goschen
Region VII Multimedia Inspection Coordinator

THRU: Leo J. Alderman Leo J. Alderman
Director, Environmental Services Division

TO: Martha R. Steincamp
Regional Counsel

This memorandum transmits the summary of significant findings and observations made during the coordinated level D multimedia inspection at The Doe Run Company's Herculaneum Smelter, Herculaneum, Missouri. The inspection was performed between January 31, and February 7, 1995. It consisted of comprehensive regulatory evaluations to determine Doe Run's compliance with the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA/NPDES), the Clean Air Act (CAA), the Safe Drinking Water Act - Underground Injection Control (SDWA/UIC), and the Emergency Planning and Community Right-To-Know Act (EPCRA). The SDWA/UIC inspection was conducted jointly by the EPA and the Missouri Department of Natural Resources' (MDNR) Division of Geological and Land Survey (DGLS). MDNR also assisted in the RCRA and CAA inspections. Individual media inspection reports may be obtained by contacting the appropriate program representative.

Participants

The Doe Run Company, Herculaneum Smelter:
Daniel L. Vornberg, Director of Environmental Affairs
James Lanzafame, Environmental Manager
Facility Address: 881 Main Street
Herculaneum, MO 64048
(314) 479-5311

U.S. Environmental Protection Agency (EPA):
Kristan C. Goschen, RCRA inspection
Ted Fritz, SDWA/UIC inspection

40199138



SUPERFUND RECORDS



Bruce Littell, CWA/NPDES inspection
James Hirtz, EPCRA inspection
Pete Fulweiler, CAA inspection

Missouri Department of Natural Resources:
Evan Kifer, DGLS, SDWA/UIC inspection
James Burris, SERO, RCRA/CAA inspection

Background

The Doe Run Company owns and operates an integrated lead mining, milling, smelting, and refining company in eastern Missouri. Company operations include six lead mines (in the Viburnum Trend), four mills, and two smelters. Lead ore, known as galena, is processed in the mills to form lead concentrate. The lead concentrate consists of approximately 80% lead sulfide. The concentrate is shipped from the mills to the Herculanum smelter, located in Herculanum, Missouri. The Herculanum facility operates 24-hours per day, 350 days per year. The smelting operations occupy approximately 28 acres of a 620 acre site which is bordered on the east by the Mississippi river and on the west by residential areas. Currently the facility employs approximately 325 people and produced approximately 194,000 tons of lead in 1994.

Sintering, refining, and sulfuric acid production are the major process operations that occur at the Herculanum facility. These processes begin upon receipt of seven to eight rail cars of lead ore concentrate per day by the facility. The concentrate is mixed with materials from 23 different bins. The mixing reduces the lead sulfide concentration in the concentrate and forms the proper sinter feed mix. Sintering occurs in a large furnace-like device where the sinter mix is ignited and burns via exothermic reaction, driving off excess sulfur and forming lead oxide clinker. The clinker is fed into one of three blast furnaces where it is reduced to metallic lead bullion. The bullion drains out of the blast furnace and is transferred to the dross furnace. The dross furnace is the start of the refining operation. Bullion from the dross furnace is poured into 1 or more of 13 large kettles. Various metallurgical processes are used to remove zinc, copper, arsenides, and silver. Dross, skimmings of lighter metals and impurities, are removed and recycled through the sinter machine. Specialized vacuum condensation processes are used on some of the kettles to condense out the remaining small quantities of zinc and providing a high purity lead product. Alloying of bullion is also done as part of the refining process. The product bullion is pumped through heated casting lines and cast into pigs and ingots, or processed into sheet lead. Waste sulfur containing gases produced by the sintering operation are routed to a MONSANTO acid plant. This 1970-era plant produces approximately 50-60,000 tons of sulfuric acid per year. The acid is stored in on-site tanks until it can

be loaded onto trucks, rail cars, or barges for off-site transport.

Inspection Findings and Observations

CWA/NPDES

The purpose of the NPDES inspection was to determine compliance with the parameters identified in Doe Run's NPDES permit. Doe Run uses as much as 140 gallons per minute of process water in its smelting operations. This water is drawn from three ranney wells located near the Mississippi river. City water is used for sanitary purposes and a few specialized process applications. Sanitary wastewater is discharged to the city POTW. Process wastewaters are largely recycled after varying degrees of treatment. Doe Run has three permitted outfalls, #001, #002, and #003. Wastewater treatment sludges are returned to the sinter plant and filtrate from the filter press is returned to an equalization tank. Grab samples were taken from outfall #001 and analyzed for metals content and pH. At the time of the inspection there were no discharges from outfalls #002 and #003.

The following regulatory violations or concerns were noted during the inspection:

- Analysis of the grab sample for metals showed no exceedences. However, an exceedence of the discharge limit for pH was identified. The permit specified range is between 7.5 and 10 standard units. The pH was measured at 10.33 standard units. Additionally, the pH meters used by Herculanum are not calibrated using the two-point standard method.
- A review of the 1994 self-monitoring records revealed exceedences of the permit limits for lead, zinc, and total suspended solids (TSS) occurred at outfalls #001 and #002. In addition, the values for TSS and arsenic were not reported for some months.
- Records were not maintained which identified the analytical procedures used during monitoring of discharge parameters.
- During the 1994 DMR QA performance audit of Doe Run's Viburnum laboratory, e.g., the laboratory used by Herculanum, unacceptable values for BOD, copper and TSS were identified. Herculanum's self-monitoring data may need to be reevaluated.
- Herculanum does composite sampling for TSS but only does grab sampling for metals analysis. Composite sampling should be evaluated for use during all sampling as it

generally provides more representative results.

- The cyclone system in the clarifier was not working during the inspection. Repair of this system is needed to assure maximum efficiency during wastewater treatment.

RCRA

The Herculanum facility had notified EPA that they were operating as a small quantity generator of hazardous waste (100-1000 kg/mo). However, upon review of their waste generation and management practices, the Herculanum facility was found to be operating as a large quantity generator of hazardous waste (>1000 kg/mo). The major waste streams generated by the facility include spent parts washer solvents, spent grease, spent refractory brick, used oils, primary smelter slag, nickel speiss, and baghouse dust. Herculanum also processes secondary smelter slag from Doe Run's Boss, Missouri, smelting facility. This slag is managed under a MDNR Resource Recovery Permit. It is used as a raw material feedstock substitute during the preparation of the sinter mix.

The following apparent regulatory violations of RCRA were noted during the inspection:

- Failure to up-date generator notification
- Failure to maintain LDR notifications
- Failure to maintain manifest records
- Failure to use consecutive manifest document numbers
- Failure to keep containers closed
- Failure to have a personnel training program that met the RCRA requirements
- Failure to mark the date of accumulation on containers
- Failure to properly label containers with the words "Hazardous Waste"
- Failure to have a contingency plan designed to meet the RCRA requirements
- Failure to comply with the waste pile requirement
- Failure to make adequate waste determinations

CAA

Herculanum, Missouri, is located within a non-attainment area for lead, per the National Ambient Air Quality Standards. In order to bring Doe run into compliance with these standards, two State Implementation Plans (SIPs) have been developed, e.g., 1990 and 1993. At the time of the inspection, only the 1990 SIP was Federally enforceable. The Herculanum facility is also subject to the Missouri air pollution control rules, including those governing lead smelting, and has one emission point subject to the Federal New Source Performance Standards for Primary Lead Smelters.

At the time of the inspection, no apparent regulatory violations were noted. However, on May 5, 1995, the 1993 SIP received final approval. Additional emission control measures will need to be implemented in order to achieve compliance with the 1993 SIP.

EPCRA

During the inspection, a data quality assessment was completed and compliance under Section 312 and 313 of EPCRA, and Section 103 of CERCLA was evaluated. The following apparent regulatory violations were identified:

- Failure to submit Form R reports for 1989, 1990, and 1991. These reports were required due to the high levels of chromium contained in the refractory brick.
- Failure to make an immediate notification under CERCLA 103 for daily releases of lead sulfide emissions for 1993.

SDWA/UIC

The purpose of the UIC inspection was to identify if any waste management activities caused the facility to be subject to the UIC regulations. The SDWA/UIC inspection was conducted jointly by the EPA and the MDNR DGLS.

No UIC regulated units were identified during the inspection

Potential Cross-Media Implications

During the review of the individual inspection reports, the following areas were identified as having potential cross-media implications. It is recommended that they be further evaluated.

- EPCRA/RCRA

Waste analysis and determination for the used refractory brick.

Pollution Prevention

The facility was provided general pollution prevention guidance and source material during the inspection.

Program Representatives

RCRA, David Doyle
CWA, Don Toensing
CAA, Mary Tietjen-Mindrup
SDWA/UIC & PWS, Gerald Foree
EPCRA, Robert Jackson

cc: ECO, Diane Callier
RCRA, David Doyle
CWA, Don Toensing
~~CAA, Mary Tietjen-Mindrup~~
SDWA/UIC, Gerald Foree
EPCRA, Robert Jackson



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL SERVICES DIVISION
REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

MAY 3 1995



MEMORANDUM

SUBJECT: Transmittal of Inspection Report - Air

FROM: Peter Fulweiler *PF*
Environmental Engineer, COMP/EMCM/ENSV

TO: Mary A. Tietjen Mindrup
Chief, Air Compliance Section, ARBR/ARTX

THRU: Joe Arellano, P.E. *JA*
Chief, Compliance Assurance Section, EMCM/ENSV

This memorandum transmits the following Air Compliance Inspection Report prepared by the Compliance Assurance Section, Environmental Monitoring and Compliance Branch, Environmental Services Division.

<u>Facility</u>	<u>AFS Number</u>	<u>Activity Number</u>
Doe Run Company Herculaneum, MO	29-099-0003	SPT07

Attachments

AIR COMPLIANCE INSPECTION REPORT

AT

DOE RUN COMPANY
881 MAIN STREET
HERCULANEUM, MISSOURI
63048

TELEPHONE NUMBER: (314) 933-3143

AFS PLANT I.D.: 29-099-0003

ON

JANUARY 31 - FEBRUARY 2, 1995

BY

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region VII
Environmental Services Division

INTRODUCTION

At the request of the Air and Toxics Division (ARTX), the Environmental Monitoring and Compliance Branch (EMCM), Compliance Assurance Section (COMP) conducted a Level C Multi-Media Compliance Inspection (MMCI) at the Doe Run Company facility in Herculanum, Missouri. The purpose of the MMCI was to determine Doe Run's compliance status with applicable State and Federal air pollution, solid waste, and water pollution regulations.

PARTICIPANTS

Doe Run Company::

James Lanzafame, Environmental Manager
Daniel Vornberg, Director of Environmental Affairs

Missouri Department of Natural Resources:

James Burris, Environmental Engineer
Evan Kifer, Geologist

United States Environmental Protection Agency (EPA):

Kristan Goschen, Environmental Scientist
Bruce Littell, Biologist
Ted Fritz, Geologist
Peter Fulweiler, Environmental Engineer

INSPECTION PROCEDURES

We arrived at the Doe Run smelter at 9:00 a.m. on the 31st of January. We explained to Mr. Vornberg and Mr. Lanzafame the scope of the inspection that we intended to conduct. Mr. Goschen explained the procedures for claiming any information collected as confidential. The remainder of the morning was spent discussing general plant operation, water sampling and underground injection well issues. The afternoon was spent discussing RCRA issues and touring the facility.

We returned to the smelter at 8:30 a.m. on the 1st of February. The morning was spent discussing RCRA, water sampling and SIP (State Implementation Plan) issues. The afternoon was spent touring RCRA waste management areas and the sinter plant and discussing RCRA and air issues.

We held an inspection closing meeting in the morning on February 2nd during which inspection findings were discussed.

Due to the constraints imposed by conducting inspections under four programs at the same time, I did not inspect all of the air pollution control equipment at the smelter. Because not all of the air pollution control equipment was inspected I did not fill out Process Summary Sheets or Emissions Inventory Sheets. No excess visible emissions were seen. I did complete a Method 9 observation of the main stack. The results of this observation are included as attachment number 1.

PROCESS/FACILITY DESCRIPTION

The Doe Run smelter produces lead and sulfuric acid from lead ore concentrate. Lead ore is mined by the Doe Run Company at six locations in Missouri. The ore is concentrated in floatation chambers at four mills. The concentrate is taken to the Herculaneum facility for smelting.

The main constituent of the concentrate is lead sulfide (Pbs). The concentrate is oxidized in the sinter plant, releasing SO₂, leaving lead oxide, PbO.

The lead oxide is reduced in one of three blast furnaces forming elemental lead. Impurities in the lead are then removed through various processes in the refining department.

The lead is cast into ingots or continuous cast into strips. Mr. Lanzafame told us that approximately 194,000 tons of lead were produced in 1994.

The sinter machine evolves sulfur laden gasses in two streams. The "heavy" stream at the start of the sinter process is collected and sent to the acid plant where sulfuric acid (H₂SO₄)

is produced. Mr. Lanzafame told us that approximately 50,000 tons of sulfuric acid are produced annually. The "light" (sulfur) stream, as well as other controlled exhaust streams are ducted to various baghouses.

OBSERVATIONS/FINDINGS

Herculaneum, Missouri is classified as nonattainment for the National Ambient Air Quality Standards (NAAQS) for lead. The basis for this nonattainment classification is the exceedance of the standard (1.5 ug of Pb/m³ of air) as measured at ambient air monitoring stations in the vicinity of the smelter. To bring Herculaneum into attainment with the NAAQS, two State Implementation Plan (SIP) agreements have been made with the Doe Run smelter. The 1990 plan required certain process and air pollution control modifications to be made and has a Work Practices Manual associated with it. The Work Practices manual details housekeeping, inspection and emission control requirements. The 1993 SIP agreement calls for further emissions reductions measures but was not Federally enforceable at the time of this inspection.

Doe Run is also subject to Missouri air pollution control rules governing lead smelting as well as several other provisions in the Missouri Air Pollution Control Rules.

One emission point (the South End Baghouse Project) at the smelter is subject to rules under the Federal New Source Performance Standards (NSPS) for Primary Lead Smelters.

I inspected the smelter for compliance with the earlier SIP agreement, the work practices manual, the Missouri Air Pollution Control Regulations and the NSPS.

I asked Mr. Lanzafame what is done at the smelter to curtail SO₂ emissions at the smelter. He told me that ambient monitors in the area are linked directly to the sinter plant control room and that if excess SO₂ is detected the sinter plant is slowed down or the acid plant production increased to curb these emissions. I asked if Doe Run maintains a complaint log and was told that they do not.

Ambient levels of lead are monitored in the vicinity of the smelter on every sixth day. Some of the monitors are operated by the smelter and some by the State of Missouri. I asked Mr. Lanzafame if the smelter designs its operating schedule in any way as to lessen emissions on monitoring days. He said they did not.

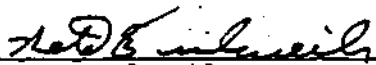
SUMMARY

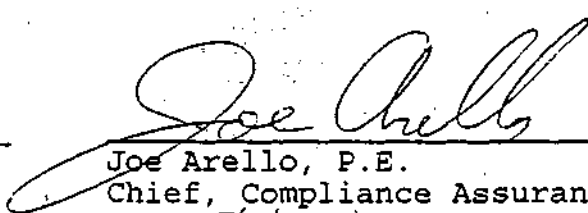
The Doe Run Company operates a primary lead smelter in Herculaneum, Missouri. The EPA has designated the area within the city limits of Herculaneum as nonattainment for lead in the ambient air.

The Doe Run smelter is regulated by Missouri State regulations, a 1990 Consent Order and supplemental SIP agreement, and New Source Performance Standards (NSPS). A 1993 SIP agreement between Doe Run and the State of Missouri is in place but is not yet Federally enforceable.

I inspected records which are required to be kept by the 1990 SIP. These records appeared to be in order. I looked at equipment inspection, maintenance and housekeeping records as required by the work practices manual associated with the 1990 SIP. These records appeared to be in order. Test reports for the South End Baghouse Project (the NSPS affected facility at the smelter) indicate that the facility met NSPS emissions requirements at the time of testing.

The 1993 SIP requires addition measures to be taken should ambient air levels of lead continue to be exceeded. Fourth quarter 1994 test results for lead in the ambient air in Herculaneum indicate that the 1.5 ug/m^3 have again been exceeded. See third and fourth quarter test results as attachment number 2.


Peter Fulweiler
Environmental Engineer
Date: 5/2/95
Activity Number: SPT05


Joe Arelllo, P.E.
Chief, Compliance Assurance Section
Date: 5/2/95

Attachments:

1. Visible Emissions Evaluation Sheet, 1 page
2. Lead Monitoring Sites Reports, 6 pages

Attachment 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
VISIBLE EMISSIONS EVALUATION DATA SHEET

Date 1/31/95

Plant Name OCK RUAL HERCULANEUM

Observer ANDER FULWELSON

Address 881 MAIN ST, HERCULANEUM MO

Observation began 15:48
ended 15:55

Phone 314 933 3143

Source Identification (Stack, Duct, etc.)	0	15	30	45	0	15	30	45
<u>MAIN STACK</u>	0	5	5	10	5	30		
	1	5	10	10	5	31		
	2	5	5	10	5	32		
	3	5	5	10	10	33		
	4	5	5	5	5	34		
Observer Location (Diagram on back of sheet)	5	5	5	10	5	35		
Distance from Observer to source <u>4m</u>	6	10	5	5	5	36		
Height of Source (above ground)	7					37		
	8					38		
	9					39		
Weather Conditions	10					40		
Wind Conditions <u>SW S</u>	11					41		
Wind Speed <u>5-10</u>	12					42		
Temperature <u>45° F</u>	13					43		
Relative Humidity	14					44		
Position of Sun <u>TO NW</u>	15					45		
Sky Conditions <u>CLDR</u>	16					46		
(clear, overcast, % clouds, etc.)	17					47		
color of clouds, etc.)	18					48		
	19					49		
Plume Description	20					50		
Color <u>LIGHT</u>	21					51		
Background <u>BLUE SKY</u>	22					52		
Type (wet or <u>dry</u>) Dist.	23					53		
Plant Representatives	24					54		
Contacted	25					55		
	26					56		
Comments <u>TAKEN FROM SOUTH OF</u>	27					57		
<u>STRIP MILL PARKING LOT</u>	28					58		
	29					59		
Observer's Signature <u>ANDER FULWELSON</u> Date of Last Recertification	AUG 6.67% opacity							

* if wet, distance (ft.) from plume outlet to point in plume where observations made.

Attachment 2

LEAD MONITORING SITES - QUARTERLY FAST TRACK REPORT

AIRS No	SITE LOCATION	SITE ABRV	MONITORING AGENCY	SAMPLING SCHEDULE
Holt Co., MO				
Schuylkill				
29-087-0006	North fence line	SKN	MDNR	every 6th day
29-087-0007	Derr Prop, south of plant	SKS	MDNR	every 6th day
Iron Co., MO				
Doe Run Buick				
29-093-0016	Hwy KK, S of plant - DRB #1	SO	Doe Run	every 6th day
29-093-0020	Hwy 32, NW of plant - DRB #4	NNW	Doe Run	every 6th day
29-093-0021	Hwy 32, W of plant - DRB #5	NO	Doe Run	every 6th day
29-093-0022	Hwy 32, NW of plant - DRB #6	NW	Doe Run	every 6th day
Iron Co., MO				
ASARCO, Glover				
29-093-0023	McHenry Res, Hogan	HOG	MDNR	every 3rd day
29-093-0024	Dunn, Glover	DUN	MDNR	every 3rd day
29-093-0026	Chloride, - ASARCO #1	CHL	ASARCO	every other day
29-093-0027	Post Off, Glover - ASARCO #2	PO	ASARCO	every other day
29-093-0025	North (Hogan), - ASARCO #3	NO	ASARCO	every other day
29-093-0029	Big Creek, Glover - ASARCO #5	BC	ASARCO	every other day
29-093-0030	Tyndell Prop, Glover	TYN	MDNR	every 3rd day
Jefferson Co., MO				
Doe Run, Herculaeum				
29-099-0005	Dunklin High School	MNS	MDNR	every 6th day
29-099-0005	Dunklin High School, - DRH #3	DHS	Doe Run	every 6th day
29-099-0008	Golf Course, - DRH #2	GLF	Doe Run	every 6th day
29-099-0009	North (Dow), - DRH #4	NO	Doe Run	every 6th day
29-099-0010	Ursuline Academy, - DRH #1	URS	Doe Run	every 6th day
29-099-0011	Rutz Home, - DRH #5	RUT	Doe Run	every 6th day
29-099-0013	Div Managers Home, - DRH #6	DMH	Doe Run	every 6th day
29-099-0015	A & Broad Sts, - DRH #7	BRD	Doe Run	every 6th day
Omaha, NE				
ASARCO				
31-055-0011	11th & Nicholas	NIC	Douglas Co	every 6th day
31-055-0041	4th & Jones	JON	Douglas Co	every 6th day
31-055-0042	700 Abbott Dr	ABB	Douglas Co	every other day
31-055-0046	Riverfront	RIV	Douglas Co	every other day
31-055-0000	Railroad Yard	RRY	Douglas Co	every other day

QUARTERLY LEAD DATA REPORT - OCTOBER / DECEMBER 94.

All data in units of ug/m3

Doe Run Buick

Schuylkill

DATE	SO	NW	NO	NW
10/05	1.00	1.89	0.87	0.97
10/11	0.39	0.60	0.73	0.14
10/17	0.76	0.44	0.72	0.16
10/23	1.71	0.22	0.13	0.11
10/29	0.66	0.63	0.98	0.09

DATE	SKN	SKS
10/05	1.13	0.22
10/11	1.80	0.17
10/17		0.14
10/23		1.02
10/29	1.19	0.58

11/04	1.41	0.17	1.48	0.55
11/10	0.24	0.52	1.03	0.10
11/16	0.23	0.27	0.11	0.36
11/22	0.96	0.01	0.09	0.03
11/28	0.33	0.40	0.25	0.32

11/04	0.35	0.10
11/10		0.20
11/16	0.51	0.21
11/22	0.53	0.73
11/28	0.57	0.34

12/04	0.38	0.52	0.37	1.19
12/10	0.95	0.12	0.21	0.12
12/16		0.12	0.21	0.12
12/22		0.31	0.16	0.23
12/28	1.20	0.50	0.47	0.21

12/04	0.50	0.43
12/10	0.21	1.09
12/16	0.90	0.10
12/22	0.19	
12/28	0.29	0.40

Qtr Avg 0.79 0.45 0.52 0.31

Qtr Avg 0.93 0.41

Doe Run Herculeaneum

DATE	MHS	DHS	GLF	NO	URS	RUT	DMH	BRD
10/05	2.86	1.22	0.43	0.18	0.61	0.60	0.97	4.56
10/11	0.20	0.01	0.52	0.01	0.01	0.11	0.25	22.63
10/17	13.15	11.99	0.16	2.00	0.01	0.98	4.08	1.40
10/23	0.63	0.18	0.01	0.01	0.01	0.37	0.20	0.48
10/29	4.37	3.20	0.25	0.37	0.16	5.95	4.81	2.17

11/04	4.91	3.40	0.04	0.50	0.02	5.71	0.87	1.68
11/10	0.41	0.11	0.04	0.08	0.03	0.08	0.20	1.81
11/16	1.47	0.68	0.41	0.12	0.36	0.52	0.52	0.49
11/22	0.07	0.19	0.01	0.09	0.21	0.17	0.20	0.24
11/28	0.20	0.01	0.01	0.01	0.01	0.25	0.06	0.18

12/04	1.03	0.44	1.32	0.33	0.01	0.20	0.29	7.26
12/10	0.11	0.00	0.01	0.01	0.05	0.10	0.01	0.39
12/16	1.67	0.01	0.18	0.20	0.01	0.12	0.21	3.00
12/22	0.14	0.07	0.01	0.07	0.40	0.01	0.10	0.19
12/28	0.15	0.03	0.04	0.03	0.06	1.06	0.10	0.35

Qtr Avg 2.09* 1.44 0.23 0.27 0.13 1.08 0.86 3.12*

* = Quarterly average value exceeds the Pb NAAQS of 1.5ug/m3.

= Less than 75% of the values for the 6 day schedule.

+ = All of the above sites operate on the 6 day sampling schedule.

QUARTERLY LEAD DATA REPORT - OCTOBER / DECEMBER 94

All data in units of ug/m3

ASARCO, Glover				ASARCO, Glover				ASARCO, Glover			
DATE	HOG	TYN	DUN	DATE	HOG	TYN	DUN	DATE	HOG	TYN	DUN
10/02	0.22	1.23	11.90	11/01	4.08			12/01	3.71	2.88	14.50
10/05	0.66	1.21	9.56	+11/04	0.96	0.49	1.98	+12/04	0.22	1.71	4.67
10/08	1.40	0.65	3.32	11/07	3.33	2.01	1.62	12/07	0.17	1.00	
+10/11	0.98	0.21	5.59	+11/10	0.17	0.22	4.88	+12/10	0.08	0.46	
10/14	0.23	1.97	10.03	11/13	0.48	0.12	9.05	12/13	0.12	0.31	2.03
+10/17	3.14	0.52	6.47	+11/16	0.23	0.55	12.17	+12/16	2.15	0.41	0.52
10/20	0.43	3.04	6.12	11/19	0.10	0.81	13.44	12/19	1.96	0.60	5.39
+10/23	0.19			+11/22	0.14	1.63	5.16	+12/22		2.03	5.62
10/26	2.05			11/25	0.97	0.27	6.32	12/25	0.87	0.49	
+10/29	1.73			+11/28	0.15	0.27	0.66	+12/28		3.19	16.06
								12/31		0.66	0.89
								Qtr Avg	1.10	1.07	6.58*

ASARCO, Glover					ASARCO, Glover					ASARCO, Glover				
DATE	NO	CHL	PO	BC	DATE	NO	CHL	PO	BC	DATE	NO	CHL	PO	BC
10/02	0.11	0.65	0.39	3.53	11/01	2.06	3.31		16.82	12/01	2.58	5.16	9.99	22.06
+10/05	0.45	2.51	10.56	16.18	+11/04	2.43	3.65	2.22		+12/04	0.12	2.47	0.87	7.61
10/08	2.01	0.68	0.48	2.17	11/07	2.77	0.06	3.85	6.45	12/07	0.13	0.72	5.46	3.11
+10/11	0.12	0.88	1.01	6.28	+11/10	0.07	2.16	0.16	0.92	+12/10	0.38	0.45		3.11
10/14	0.12	1.46	1.84	3.08	11/13	0.14	0.06	0.49	0.05	12/13	0.27	0.22	0.45	3.43
+10/17	2.08	0.38	2.72	1.03	+11/16	0.13	0.95	0.37	4.45	+12/16	0.64	0.07	7.32	0.28
10/20	0.34	3.95	4.32	14.17	11/19	0.12	0.70	0.64	2.74	12/19	2.52	1.18	3.82	9.89
+10/23	0.12	0.37	2.39	8.80	+11/22	0.38	1.76	1.91	4.12	+12/22	0.18	1.76	8.74	7.80
10/26	3.16		16.60	23.26	11/25	2.61	0.44	6.42	0.65	12/25	0.13	0.64	0.17	0.10
+10/29	2.68		11.04	20.21	+11/28	0.49	0.65	8.12	0.93	+12/28	8.66	7.54	30.77	24.81
										12/31	0.13	0.90	0.32	0.82
										Qtr Avg	1.23	1.58*	4.94*	7.30*

ASARCO, Omaha						ASARCO, Omaha						ASARCO, Omaha					
DATE	ABB	RIV	RRY	NIC	JON	DATE	ABB	RIV	RRY	NIC	JON	DATE	ABB	RIV	RRY	NIC	JON
10/01	0.20	3.17				11/02	2.51	0.53				12/02	1.34	0.05			
10/03	0.20	0.48				+11/04	0.14	2.99		0.03	0.20	+12/04	0.06	4.55		0.07	0.63
+10/05	0.36	0.06		0.57	0.02	11/06	0.22	1.38				12/06	0.13				
10/07	0.09	2.47				11/08	0.23	0.27				12/08	0.04	3.99			
10/09	0.07					+11/10	0.38	0.09		0.39	0.04	+12/10	0.06			0.06	0.03
+10/11	1.37	0.05		0.48	0.02	11/12	3.70	0.05				12/12		0.19			
10/13	0.14	1.03				11/14	0.28					12/14	0.11	0.12			
10/15	0.25	0.02				+11/16	3.42	0.09		1.51	0.02	+12/16	0.60	0.21		0.39	0.01
+10/17	1.94	0.01		0.57	0.01	11/18	0.17	4.11				12/18	0.04	0.21			
10/19	0.25	2.26				11/20	0.10	0.18				12/20	0.23	0.52			
10/21	0.86	0.08				+11/22	0.07	0.98		0.01	0.01	+12/22	0.16	0.55		0.02	0.07
+10/23	0.18	0.53		0.04	0.03	11/24	1.66	0.74				12/24	0.56	0.03			
10/25	0.13	6.60				11/26	0.18					12/26	0.60	0.01			
10/27	14.81	0.10				+11/28	0.07	0.15		0.02	0.01	+12/28	0.03	0.68		0.03	0.01
+10/29	0.42	7.19		0.10	0.62	11/30	2.52	0.03				12/30	0.94	0.19			
10/31	0.84	0.49										Qtr Avg	0.95	1.16		0.29	0.12

+ = Sample dates that constitute the 6 day schedule.

* = Quarterly average value exceeds the Pb NAAQS of 1.5ug/m3.

= Less than 75% of the values for the 6 day schedule.

HEAD MONITORING SITES - QUARTERLY FAST TRACK REPORT

AIRS No	SITE LOCATION	SITE ABRV	MONITORING AGENCY	SAMPLING SCHEDULE
-----	-----	-----	-----	-----
	Holt Co., MO	Schuylkill		
29-087-0006	North fence line	SKN	MDNR	every 6th day
29-087-0007	Derr Prop, south of plant	SKS	MDNR	every 6th day
	Iron Co., MO	Doe Run Buick		
29-093-0016	Hwy KK, S of plant - DRB #1	SO	Doe Run	every 6th day
29-093-0020	Hwy 32, NNW of plant - DRB #4	NNW	Doe Run	every 6th day
29-093-0021	Hwy 32, N of plant - DRB #5	NO	Doe Run	every 6th day
29-093-0022	Hwy 32, NW of plant - DRB #6	NW	Doe Run	every 6th day
	Iron Co., MO	ASARCO, Glover		
29-093-0023	McHenry Res, Hogan	HOG	MDNR	every 3rd day
29-093-0024	Dunn Res, Glover	DUN	MDNR	every 3rd day
29-093-0026	Chloride, - ASARCO #1	CHL	ASARCO	every 3rd day
29-093-0027	Post Off, Glover - ASARCO #2	PO	ASARCO	every 3rd day
29-093-0025	North (Hogan), - ASARCO #3	NO	ASARCO	every 3rd day
29-093-0029	Big Creek, Glover - ASARCO #5	BC	ASARCO	every 3rd day
29-093-0030	Tyndell Property	TYN	MDNR	every 3rd day
	Jefferson Co., MO	Doe Run, Herculaeum		
29-099-0005	Dunklin High School	MHS	MDNR	every 6th day
29-099-0005	Dunklin High School, - DRH #3	DHS	Doe Run	every 6th day
29-099-0008	Golf Course, - DRH #2	GLF	Doe Run	every 6th day
29-099-0009	North (Dow), - DRH #4	NO	Doe Run	every 6th day
29-099-0010	Ursuline Academy, - DRH #1	URS	Doe Run	every 6th day
29-099-0011	Rutz Home, - DRH #5	RUT	Doe Run	every 6th day
29-099-0013	Div Managers Home, - DRH #6	DMH	Doe Run	every 6th day
29-099-0015	A & Broad Sts, - DRH #7	BRD	Doe Run	every 6th day
	Omaha, NE	ASARCO		
31-055-0011	11th & Nicholas	NIC	Douglas Co	every 6th day
31-055-0041	4th & Jones	JON	Douglas Co	every 6th day
31-055-0042	700 Abbott Dr	ABB	Douglas Co	every day
31-055-0046	Riverfront	RIV	Douglas Co	every other day

MONITORING

JAN 15, 21, 27

FEB 2, 8

ARTERLY LEAD DATA REPORT - JULY / SEPTEMBER 94

All data in units of ug/m3

Doe Run Buick

Schuykill

DATE	SO	HNW	NO	NW	DATE	SKN	SKS
07/01	1.55	0.96	0.55	0.56	07/01	2.07	0.17
07/07	0.52	0.46	0.69	0.20	07/07	0.62	0.90
07/13	0.63	0.59	1.30	0.40	07/13	0.32	0.94
07/19	0.50	0.25	1.29	0.17	07/19	4.41	0.07
07/25	0.57	0.33	0.23	0.12	07/25	0.17	0.36
07/31	0.12	0.17	0.94	0.12	07/31	2.02	0.15
08/06	0.16	0.51	0.08	0.64	08/06	2.52	0.08
08/12	0.43	0.05	0.51	0.19	08/12	3.34	0.08
08/18	0.65	0.52	0.30	0.05	08/18	1.63	0.15
08/24	0.24	0.05	0.22	0.05	08/24	2.46	0.14
08/30	0.19	1.06	0.82	0.39	08/30	0.69	1.48
09/05	0.05	0.10	0.19	0.05	09/05	0.52	0.55
09/11	0.14	1.53	0.05	1.98	09/11	4.40	0.19
09/17	5.56	0.14	0.15	0.03	09/17	0.36	1.05
09/23	0.06	0.02	0.02	0.02	09/23	0.30	0.70
09/29	0.58	1.15	0.08	0.74	09/29	4.54	0.41
Qtr Avg	0.80	0.53	0.49	0.38	Qtr Avg	1.90*	0.49

Doe Run Herculeum

ASARCO, Glover

DATE	MHS	DHS	GLF	NO	URS	RUT	DMH	BRD	DATE	TYN	DATE	TYN
07/01	2.20	1.42	0.04	0.63	0.01	1.54	1.00	1.39	+07/01	3.27	+08/18	
07/07	3.04	1.75	0.01	0.01	0.01	0.01	0.22	2.35	07/04	1.38	08/21	1.09
07/13	2.10		0.01	0.23	0.01	0.70	0.44	5.56	+07/07	1.07	+08/24	1.10
07/19			0.01	0.26	0.01	1.29	0.86	1.90	07/10	0.44	08/27	
07/25	0.38	0.16	0.02	0.07	0.33	0.58	0.27		+07/13	2.86	+08/30	0.41
07/31	2.96	1.92	0.04	0.21	0.06	1.90	0.85		07/16	2.42		
08/06	1.25	0.71	0.21	0.14	0.42	0.51		5.60	+07/19	1.47	09/02	0.34
08/12	3.30	3.48	0.41	0.62	0.01	1.18	1.14	4.60	07/22	0.90	+09/05	0.25
08/18	0.90	1.01	0.42	0.96	0.01	1.81	0.80	7.70	+07/25	0.73	09/08	0.16
08/24	1.93	1.70	0.09	0.61	0.04	1.43	1.05	2.21	07/28	2.28	+09/11	0.55
08/30	1.31	0.70	0.13	0.43	0.06	0.85	0.52	6.51	+07/31	0.77	09/14	0.85
09/05	1.34	1.27	0.07	0.52	0.20	0.22	0.23	0.83			+09/17	1.58
09/11	2.01	1.69	0.35	0.26	0.01	1.48	0.56		08/03	2.21	09/20	0.47
09/17	0.35	0.01	0.01	0.01		0.24	0.08		+08/06	1.30	+09/23	0.50
09/23	1.58	1.29	0.11	0.34	0.06	0.76	0.37	5.35	08/09	1.25	09/26	0.42
09/29	1.63	1.43	0.06	0.07	0.05	0.57	0.97	2.97	+08/12	0.74	+09/29	
									08/15	4.35		
Qtr Avg	1.75*	1.32	0.12	0.34	0.09	0.94	0.62	3.91*	Qtr Avg			1.26

* = Quarterly average value exceeds the Pb NAAQS of 1.5ug/m3.

= Less than 75% of the values for the 6 day schedule.

+ = All of the above sites operate on the 6 day sampling schedule.

ARTERLY LEAD DATA REPORT - JULY / SEPTEMBER 94 All data in units of ug/m3

ASARCO, Glover							ASARCO, Glover							ASARCO, Glover						
DATE	HOG	DUN	CHL	PO	NO	BC	DATE	HOG	DUN	CHL	PO	NO	BC	DATE	HOG	DUN	CHL	PO	NO	BC
+07/01	2.06	11.90	2.11	3.32	4.45	23.55	08/03	0.85	12.17	2.17	20.75	1.23	18.00	09/02	0.12	3.63	0.23	4.83	0.10	0.09
07/04	2.47	9.56	0.64	12.86	4.69	14.57	+08/06	0.59	13.44	6.49	9.07	1.11	24.41	+09/05	0.37	0.94	0.09	6.31	0.45	0.64
+07/07	0.33	3.32	3.77	2.52	0.62	1.07	08/09	0.88	5.16	0.88	24.12	1.70	7.71	09/08	0.21		0.18	1.46	0.12	5.47
07/10	0.25	5.59	0.73	0.72	0.12	10.71	+08/12	0.62	6.32	1.54	7.22	0.86	10.79	+09/11	0.19		2.18	0.58	0.10	17.92
+07/13	0.86	10.03	6.79	14.19	1.61	15.68	08/15	0.10	12.51	4.45	1.13	0.11	19.76	09/14	0.55	5.54	1.00	24.41	0.55	10.90
07/16	0.41	6.47	2.74	14.08	0.74	11.74	+08/18	0.93	16.41	2.14	12.54	2.02	37.76	+09/17	0.10	5.91	2.27	2.08	0.10	9.71
+07/19	4.20	6.12	2.30	51.43	9.26	11.97	08/21	0.18	3.54	2.67	2.74	0.11	7.18	09/20	0.33	6.52	1.26		0.10	13.53
07/22		1.98	0.37	21.27	0.49	2.27	+08/24	1.39	18.03	1.27	22.84	3.09	41.35	+09/23	0.94	1.26	0.27	2.18	1.50	1.25
+07/25	0.46	1.62	0.46	1.43	0.37	1.23	08/27	2.30	10.32		3.16	1.56	12.00	09/26	4.16		0.45	7.44	6.88	1.57
07/28	0.07	4.88	2.27	6.89	0.13	13.08	+08/30	0.87	2.14	0.62	4.75	0.89	2.12	+09/29	0.35		2.20	2.32	0.23	15.27
+07/31	0.77	9.05	1.20	12.44	1.39	18.64														

Qtr Avg 0.93 7.20* 1.86*10.04* 1.51*12.32*

ASARCO, Omaha					ASARCO, Omaha					ASARCO, Omaha				
DATE	ABB	RIV	NIC	JON	DATE	ABB	RIV	NIC	JON	DATE	ABB	RIV	NIC	JON
+07/01	0.44	0.76	0.45	0.07	08/01	0.42				09/01	0.07	0.28		
07/02	0.03				08/02	0.32	0.05			09/02	2.41			
07/03	0.24	0.02			08/03	2.22				09/03	1.26	0.06		
07/04	2.13				08/04	0.09	4.65			09/04	5.29			
07/05					08/05	0.43				+09/05	0.05	7.23	0.02	0.64
07/06	1.05				+08/06	1.69	0.04	0.81	0.01	09/06				
+07/07	0.32	4.80	0.09	0.12	08/07	0.58				09/07	4.48			
07/08	0.03				08/08	0.78	1.61			09/08	3.48			
07/09	0.03	1.99			08/09	1.62				09/09	6.16	0.03		
07/10	2.01				08/10	2.49	0.87			09/10	7.57			
07/11	3.95	0.05			08/11	0.07				+09/11	5.35	0.03	0.81	0.01
07/12	1.10				+08/12	1.55	0.15	0.44	0.03	09/12	9.07			
+07/13	0.11	4.37	0.06	0.25	08/13	0.06				09/13	15.92	0.08		
07/14	0.15				08/14	0.03	0.57			09/14	12.00			
07/15	0.25	0.06			08/15	0.54				09/15	6.75	0.17		
07/16	0.11				08/16	1.81	0.04			09/16	0.09			
07/17	0.20	0.20			08/17	3.63				+09/17	0.03	4.39	0.02	0.81
07/18	2.61				+08/18	1.21	0.03	0.33	0.06	09/18	0.19			
+07/19		1.76	0.51	0.28	08/19	0.66				09/19	3.76	0.07		
07/20	0.25				08/20	0.05	5.78			09/20	8.53			
07/21		1.59			08/21	0.08				09/21	3.72	9.16		
07/22	0.04				08/22	1.09	0.10			09/22	0.09			
07/23	0.22	0.20			08/23	3.74				+09/23	0.07	1.50	0.01	0.36
07/24	0.20				+08/24	4.11	0.04	0.77	0.09	09/24	0.03			
+07/25	0.14	0.46	0.16	0.14	08/25					09/25	0.02	27.09		
07/26	0.03				08/26	3.25	0.04			09/26	0.04			
07/27	0.06	7.18			08/27	3.09				09/27	1.13	3.54		
07/28	0.09				08/28		2.27			09/28	0.25			
07/29	0.35	0.12			08/29	1.83				+09/29	9.27	0.20	5.55	0.03
07/30	1.96				+08/30	1.58	2.52	0.20	0.51	09/30	19.11			
+07/31	2.74	0.20	0.52	0.02	08/31	0.05								

Qtr Av 2.16* 2.19* 0.67 0.21

* = Sample dates that constitute the 6 day schedule.

* = Quarterly average value exceeds the Pb NAAQS of 1.5ug/m3.

= Less than 75% of the values for the 6 day schedule.